IN THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A computer-implemented method for previewing two or more motion control operations, the method comprising:

receiving user input selecting the two or more motion control operations, wherein the motion control operations are operable to perform motion control of a hardware device;

storing information representing the two or more motion control operations;

displaying a first preview window for previewing [[the]] cumulative motion control performed by the two or more motion control operations; and

displaying information in the first preview window which visually indicates the cumulative motion control performed by the two or more motion control operations, wherein visually indicating the cumulative motion control performed by the two or more motion control operations comprises visually indicating a spatial trajectory cumulatively performed by the two or more motion control operations.

2. (Currently Amended) The method of claim 1, further comprising:

receiving user input to the first preview window to [[visually]] graphically change the cumulative motion control performed by the two or more motion control operations; [[and]]

changing one or more of the motion control operations in order to [[update]] change the cumulative motion control performed by the motion control operations in accordance with the user input; and

updating the displayed spatial trajectory in the first preview window in order to visually indicate the changed cumulative motion control performed by the motion control operations in accordance with the user input;

wherein said changing one or more of the motion control operations comprises changing the stored information.

3. (Original) The method of claim 1,

wherein the first preview window comprises a window for previewing a velocity profile for the two or more motion control operations;

wherein the method further comprises displaying velocity information in the first preview window for at least a portion of the motion control performed by the two or more motion control operations.

4. (Original) The method of claim 1,

wherein the first preview window comprises a window for previewing an acceleration profile for the two or more motion control operations;

wherein the method further comprises displaying acceleration information in the first preview window for at least a portion of the motion control performed by the two or more motion control operations.

5. (Currently Amended) The method of claim 1,

wherein the first preview window comprises a window for previewing position data for the two or more motion control operations in a two-dimensional view;

wherein ~~the method further~~ said visually indicating the spatial trajectory cumulatively performed by the two or more motion control operations comprises plotting two-dimensional position data in the first preview window to visually indicate at least a portion of the cumulative motion control performed by the two or more motion control operations in a two-dmensional view.

6. (Currently Amended) The method of claim 1,

wherein the first preview window comprises a window for previewing position data for the two or more motion control operations in a three-dimensional view;

wherein ~~the method further~~ said visually indicating the spatial trajectory cumulatively performed by the two or more motion control operations comprises plotting three-dimensional position data in the first preview window to visually indicate at least a

portion of the cumulative motion control performed by the two or more motion control operations in a three-dmensional view.

7. (Currently Amended) The method of claim 1, further comprising:

dynamically updating the first preview window in response to selecting each of the two or more motion control operations to visually indicate the effect of selecting each operation;

wherein, for each selected motion control operation, dynamically updating the first preview window in response to selecting the motion control operation comprises dynamically updating the displayed spatial trajectory to indicate a change in the cumulative motion control, wherein the change is caused by the selected motion control operation.

8. (Currently Amended) The method of claim 1, further comprising:

receiving user input to configure one or more capture operations to be performed in one or more of the motion control operations; and

~~wherein said displaying information in the first preview window which visually indicates the motion control performed by the two or more motion control operations comprises~~ displaying information in the first preview window which visually indicates the one or more capture operations.

9. (Currently Amended) The method of claim 1, further comprising:

receiving user input to configure one or more breakpoint operations to be performed in one or more of the motion control operations; and

~~wherein said displaying information in the first preview window which visually indicates the motion control performed by the two or more motion control operations comprises~~ displaying information in the first preview window which visually indicates the one or more breakpoint operations.

10. (Currently Amended) The method of claim 1,

wherein said displaying information in the first preview window which visually indicates cumulative motion control performed by the two or more motion control operations comprises displaying information which visually indicates only a portion of the entire cumulative motion control performed by the two or more motion control operations.

11. (Currently Amended) The method of claim 1,

wherein said ~~displaying information in the first preview window which visually indicates the motion control~~ visually indicating the spatial trajectory cumulatively performed by the two or more motion control operations comprises interactively tracing [[a]] the spatial trajectory performed by the two or more motion control operations.

12. (Original) The method of claim 11, further comprising:

receiving user input specifying rate information regarding a desired rate at which to trace the trajectory; and

interactively tracing the trajectory performed by the two or more motion control operations at a rate in accordance with the specified rate information.

13. (Original) The method of claim 1, further comprising:

receiving user input specifying scale information regarding a desired scale at which to display the information in the first preview window; and

displaying the information in the first preview window at a scale in accordance with the specified scale information.

14. (Currently Amended) The method of claim 1,

wherein said displaying information in the first preview window comprises displaying first information which visually indicates a first view of the cumulative motion control performed by the two or more motion control operations, wherein the first view displays a first view of the spatial trajectory cumulatively performed by the two or more motion control operations;

wherein the method further comprises:

displaying a second preview window for previewing the cumulative motion control performed by the two or more motion control operations; and

displaying second information in the second preview window which visually indicates a second view of the cumulative motion control performed by the two or more motion control operations, wherein the second view displays a second view of the spatial trajectory cumulatively performed by the two or more motion control operations.

15. (Currently Amended) The method of claim 14,

wherein said displaying the ~~first information visually indicating the~~ first view of the spatial trajectory cumulatively ~~motion control~~ performed by the two or more motion control operations comprises displaying two-dimensional position information visually indicating a two-dimensional view of at least a portion of the spatial trajectory ~~motion control~~;

wherein said displaying the ~~second information visually indicating the~~ second view of the spatial trajectory cumulatively ~~motion control~~ performed by the two or more motion control operations comprises displaying three-dimensional position information visually indicating a three-dimensional view of at least a portion of the spatial trajectory ~~motion control~~.

16. (Currently Amended) The method of claim [[14]] 1,

wherein said ~~displaying the first information~~ visually indicating the ~~first view of the motion control~~ spatial trajectory cumulatively performed by the two or more motion control operations comprises ~~displaying~~ visually indicating a two-dimensional view of at least a portion of the spatial trajectory ~~position information indicating the motion control~~;

wherein ~~displaying the second information visually indicating the second view of the motion control performed by the two or more motion control operations~~ the method further comprises displaying velocity information [[indicating]] regarding the cumulative motion control performed by the two or more motion control operations.

17. (Original) The method of claim 1,

wherein said receiving user input selecting the two or more motion control operations does not include receiving user input specifying programming language code to implement the two or more motion control operations.

18. (Original) The method of claim 1, further comprising:

displaying a graphical user interface (GUI) that provides GUI access to a set of motion control operations;

wherein said receiving user input selecting the two or more motion control operations comprises receiving user input to the graphical user interface selecting the two or more motion control operations.

19. (Currently Amended) The method of claim 18, further comprising:

receiving user input to the graphical user interface for configuring one or more of the selected motion control operations, [[;]] wherein, for each [[operation]] of the one or more motion control operations that are configured via user input to the graphical user interface, said configuring the motion control operation affects motion control which the motion control operation is operable to perform; [[.]]

wherein the method further comprises:

for each of the one or more motion control operations that are configured via user input to the graphical user interface, updating the displayed spatial trajectory in response to configuring the motion control operation in order to indicate a change in the cumulative motion control caused by configuring the motion control operation.

20. (Original) The method of claim 19,

wherein said receiving user input to the graphical user interface for configuring one or more of the selected operations does not include receiving user input specifying programming language code to configure the operations.

21. (Original) The method of claim 19, further comprising:

for each operation to be configured, displaying a graphical panel including graphical user interface elements for setting properties of the operation and receiving user input to the graphical panel to set one or more properties of the operation.

22. (Original) The method of claim 1,

wherein said storing information representing the two or more motion control operations comprises storing a motion control sequence comprising the two or more motion control operations.

23. (Original) The method of claim 1,

wherein said storing information regarding the two or more motion control operations comprises storing a prototype comprising the two or more motion control operations.

24. (Original) The method of claim 1,

wherein said storing information regarding the two or more motion control operations comprises creating program instructions for implementing the two or more motion control operations.

25. (Original) The method of claim 24,

wherein said creating program instructions for implementing the two or more motion control operations comprises programmatically generating at least a portion of a graphical program;

wherein the graphical program includes a plurality of interconnected nodes that visually indicate functionality of the graphical program.

26. (Original) The method of claim 25,

wherein said programmatically generating the at least a portion of the graphical program comprises including one or more nodes in the graphical program operable to implement the two or more motion control operations.

27. (Original) The method of claim 25, further comprising:

executing the graphical program to perform the two or more motion control operations.

28. (Original) The method of claim 25,

wherein the graphical program is a graphical data flow program.

29. (Original) The method of claim 24,

wherein said creating program instructions for implementing the two or more motion control operations comprises generating at least a portion of a text-based program;

wherein said generating the at least a portion of the text-based program includes generating a plurality of function calls operable to implement the two or more motion control operations.

30. (Original) The method of claim 24, further comprising:

displaying the created program instructions in a second window.

31. (Currently Amended) The method of claim 30, further comprising:

receiving user input to the first preview window to [[visually]] change the cumulative motion control performed by the two or more motion control operations;

changing the program instructions to implement the [[new]] changed motion control performed by the two or more motion control operations in response to the user input; and

updating the second window to display the changed program instructions.

32. (Currently Amended) A computer-implemented method for previewing a sequence of motion control operations, the method comprising:

creating the sequence of motion control operations, wherein the sequence of motion control operations comprises one or more operations operable to perform motion control of a hardware device;

displaying a first preview window for previewing [[the]] cumulative motion control performed by the sequence of motion control operations; and

displaying information in the first preview window which visually indicates the cumulative motion control performed by the sequence of motion control operations, wherein visually indicating the cumulative motion control performed by the sequence of motion control operations comprises visually indicating a spatial trajectory cumulatively performed by the sequence of motion control operations.

33. (Currently Amended) The method of claim 32, further comprising:

receiving user input to the first preview window to [[visually]] graphically change the cumulative motion control performed by the sequence of motion control operations;

changing one or more motion control operations in the sequence in order to [[update]] change the cumulative motion control performed by the sequence in accordance with the user input; and [[.]]

updating the displayed spatial trajectory in the first preview window in order to visually indicate the changed cumulative motion control performed by the sequence motion control operations in accordance with the user input.

34. (Currently Amended) The method of claim 32,

wherein said creating the sequence of motion control operations comprises receiving user input requesting to add each motion control operation to the sequence;

wherein the method further comprises dynamically updating the first preview window in response to each motion control operation added to the sequence to visually indicate the effect of adding the motion control operation, wherein updating the first preview window comprises updating the spatial trajectory to indicate a change in the cumulative motion control, wherein the change is caused by the added motion control operation.

35. (Currently Amended) The method of claim 32,

wherein said ~~displaying information in the first preview window which visually indicates the motion control~~ visually indicating the spatial trajectory cumulatively

performed by the sequence of motion control operations comprises interactively tracing [[a]] the spatial trajectory performed by the sequence of motion control operations.

36. (Currently Amended) The method of claim 32,

wherein said displaying information in the first preview window comprises displaying first information which visually indicates a first view of the cumulative motion control performed by the sequence of motion control operations, wherein the first view displays a first view of the spatial trajectory cumulatively performed by the sequence of motion control operations;

wherein the method further comprises:

displaying a second preview window for previewing the cumulative motion control performed by the sequence of motion control operations; and

displaying second information in the second preview window which visually indicates a second view of the cumulative motion control performed by the sequence of motion control operations, wherein the second view displays a second view of the spatial trajectory cumulatively performed by the sequence of motion control operations.

37. (Currently Amended) The method of claim 36,

wherein said displaying the ~~first information visually indicating the~~ first view of the spatial trajectory cumulatively ~~motion control~~ performed by the sequence of motion control operations comprises displaying two-dimensional position information visually indicating a two-dimensional view of at least a portion of the spatial trajectory ~~motion control~~;

wherein said displaying the ~~second information visually indicating the~~ second view of the spatial trajectory cumulatively ~~motion control~~ performed by the sequence of motion control operations comprises displaying three-dimensional position information visually indicating a three-dimensional view of at least a portion of the spatial trajectory ~~motion control~~.

38. (Currently Amended) The method of claim [[36]] 32,

wherein said ~~displaying the first information~~ visually indicating the ~~first view of the motion control~~ spatial trajectory cumulatively performed by the sequence of motion control operations comprises ~~displaying~~ visually indicating a two-dimensional view of at least a portion of the spatial trajectory ~~position information indicating the motion control~~;

wherein ~~said displaying the second information visually indicating the second view of the motion control performed by the sequence of motion control operations~~ the method further comprises displaying velocity information [[indicating]] regarding the cumulative motion control performed by the sequence of motion control operations.

39. (Original) The method of claim 32,

wherein said creating the sequence of motion control operations does not include receiving user input specifying programming language code to implement the sequence of motion control operations.

40. (Original) The method of claim 32, further comprising:

displaying a graphical user interface (GUI) that provides GUI access to a set of motion control operations;

wherein said creating the sequence of motion control operations comprises receiving user input to the graphical user interface specifying operations to include in the sequence of motion control operations.

41. (Currently Amended) The method of claim 40, further comprising:

receiving user input to the graphical user interface for configuring one or more of the motion control operations in the sequence, [[;]] wherein, for each [[operation]] of the one or more motion control operations that are configured via user input to the graphical user interface, said configuring the motion control operation affects motion control which the motion control operation is operable to perform;

wherein said receiving user input to the graphical user interface for configuring the one or more of the motion control operations in the sequence does not include receiving user input specifying programming language code to configure the one or more motion control operations; [[.]]

wherein the method further comprises:

for each of the one or more motion control operations that are configured via user input to the graphical user interface, updating the displayed spatial trajectory in response to configuring the motion control operation in order to indicate a change in the cumulative motion control caused by configuring the motion control operation.

42. (Original) The method of claim 41, further comprising:

for each operation to be configured, displaying a graphical panel including graphical user interface elements for setting properties of the operation and receiving user input to the graphical panel to set one or more properties of the operation.

43. (Currently Amended) A memory medium for previewing two or more motion control operations, the memory medium comprising program instructions executable to:

receive user input selecting the two or more motion control operations, wherein the motion control operations are operable to perform motion control of a hardware device;

store information representing the two or more motion control operations;

display a first preview window for previewing [[the]] cumulative motion control performed by the two or more motion control operations; and

display information in the first preview window which visually indicates the cumulative motion control performed by the two or more motion control operations, wherein visually indicating the cumulative motion control performed by the two or more motion control operations comprises visually indicating a spatial trajectory cumulatively performed by the two or more motion control operations.

44. (Currently Amended) The memory medium of claim 43, further comprising program instructions executable to:

receive user input to the first preview window to [[visually]] graphically change the cumulative motion control performed by the two or more motion control operations; [[and]]

change one or more of the motion control operations in order to [[update]] change the cumulative motion control performed by the motion control operations in accordance with the user input; and

updating the displayed spatial trajectory in the first preview window in order to visually indicate the changed cumulative motion control performed by the motion control operations in accordance with the user input;

wherein said changing one or more of the motion control operations comprises changing the stored information.

45. (Currently Amended) A system for previewing two or more motion control operations, the system comprising:

a processor;

a memory storing program instructions;

a display device;

a motion control device;

wherein the processor is operable to execute the program instructions stored in the memory to:

receive user input selecting the two or more motion control operations, wherein the motion control operations are operable to control the motion control device;

store information representing the two or more motion control operations;

display a first preview window on the display device for previewing cumulative motion control performed by the two or more motion control operations; and

display information in the first preview window which visually indicates the cumulative motion control performed by the two or more motion control operations, wherein visually indicating the cumulative motion control performed by the two or more motion control operations comprises visually indicating a spatial trajectory cumulatively performed by the two or more motion control operations.

46. (Currently Amended) A system for previewing two or more motion control operations, the system comprising:

a motion control device;

means for receiving user input selecting the two or more motion control operations, wherein the motion control operations are operable to control the motion control device;

means for storing information representing the two or more motion control operations;

means for displaying a first preview window for previewing cumulative motion control performed by the two or more motion control operations; and

means for displaying information in the first preview window which visually indicates the cumulative motion control performed by the two or more motion control operations, wherein visually indicating the cumulative motion control performed by the two or more motion control operations comprises visually indicating a spatial trajectory cumulatively performed by the two or more motion control operations.

47. (New) The method of claim 1,

wherein said visually indicating the spatial trajectory cumulatively performed by the two or more motion control operations comprises displaying an animation of the spatial trajectory.

48. (New) The method of claim 1,

wherein said visually indicating the spatial trajectory cumulatively performed by the two or more motion control operations comprises displaying a graph with two or more spatial axes, wherein the spatial trajectory is displayed on the graph.

49. (New) The method of claim 2,

wherein said receiving user input to the first preview window to graphically change the cumulative motion control performed by the two or more motion control operations comprises receiving user input to the displayed spatial trajectory to graphically change the cumulative motion control performed by the two or more motion control operations;

wherein the one or more motion control operations are changed in response to the user input to the displayed spatial trajectory.